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## SEQUENCE LISTING

<110> Briggs, Clark A. Gopalakrishnan, Murali McKenna, David G. Monteggia, Lisa M. Roch, Jean-Marc Sullivan, James P. Touma, Edward Abbott Laboratories

<120> A VARIANT HUMAN ALPHA 7 ACETYLCHOLINE RECEPTOR SUBUNIT, AND METHODS OF PRODUCTION AND USES THEREOF

<130> 6017.US.01 <140> 08/771,737 <141> 1996-12-20 <160> 8 <170> FastSEQ for Windows Version 3.0 <210> 1 <211> 1590 <212> DNA <213> homo sapien <220> <221> CDS <222> (9)...(1514) <400> 1 tegagece atg agg tgt age eec gga gga gtg tgg etg gea etg gea gea 50 Met Arg Cys Ser Pro Gly Gly Val Trp Leu Ala Leu Ala Ala tet etc etg eac gtg tee etg eaa gge gag tte eag agg aag ett tae 98 Ser Leu Leu His Val Ser Leu Gln Gly Glu Phe Gln Arg Lys Leu Tyr 20 25 aag gag ctg gtc aag aac tac aat ccc ttg gag agg ccc gtg gcc aat 146 Lys Glu Leu Val Lys Asn Tyr Asn Pro Leu Glu Arg Pro Val Ala Asn 35 gac tcg caa cca ctc acc gtc tac ttc tcc ctg agc ctc ctg cag atc 194 Asp Ser Gln Pro Leu Thr Val Tyr Phe Ser Leu Ser Leu Leu Gln Ile 50 atg gac gtg gat gag aag aac caa gtt tta acc acc aac att tgg ctg 242 Met Asp Val Asp Glu Lys Asn Gln Val Leu Thr Thr Asn Ile Trp Leu 70 290 caa atg tct tgg aca gat cac tat tta cag tgg aat gtg tca gaa tat

Gln Met Ser Trp Thr Asp His Tyr Leu Gln Trp Asn Val Ser Glu Tyr

85 90 80 338 cca qqq qtq aag act gtt cgt ttc cca gat ggc cag att tgg aaa cca Pro Gly Val Lys Thr Val Arg Phe Pro Asp Gly Gln Ile Trp Lys Pro 105 100 gac att ctt ctc tat aac agt gct gat gag cgc ttt gac gcc aca ttc 386 Asp Ile Leu Leu Tyr Asn Ser Ala Asp Glu Arg Phe Asp Ala Thr Phe 115 cac act aac gtg ttg gtg aat tct tct ggg cat tgc cag tac ctg cct 434 His Thr Asn Val Leu Val Asn Ser Ser Gly His Cys Gln Tyr Leu Pro 130 cca ggc ata ttc aag agt tcc tgc tac atc gat gta cgc tgg ttt ccc 482 Pro Gly Ile Phe Lys Ser Ser Cys Tyr Ile Asp Val Arg Trp Phe Pro ttt gat gtg cag cac tgc aaa ctg aag ttt ggg tcc tgg tct tac gga 530 Phe Asp Val Gln His Cys Lys Leu Lys Phe Gly Ser Trp Ser Tyr Gly 165 170 160 578 ggc tgg tcc ttg gat ctg cag atg cag gag gca gat atc agt ggc tat Gly Trp Ser Leu Asp Leu Gln Met Gln Glu Ala Asp Ile Ser Gly Tyr 180 185 atc ccc aat gga gaa tgg gac cta gtg gga atc ccc ggc aag agg agt 626 Ile Pro Asn Gly Glu Trp Asp Leu Val Gly Ile Pro Gly Lys Arg Ser 195 200 gaa agg ttc tat gag tgc tgc aaa gag ccc tac ccc gat gtc acc ttc 674 Glu Arg Phe Tyr Glu Cys Cys Lys Glu Pro Tyr Pro Asp Val Thr Phe 210 215 aca gtg acc atg cgc cgc agg aca ctc tac tat ggc ctc aac ctg ctg 722 Thr Val Thr Met Arg Arg Arg Thr Leu Tyr Tyr Gly Leu Asn Leu Leu 225 230 770 atc ccc tgt gtg ctc atc tcc gcc ctc gcc ctg ctg gtg ttc ctg ctt Ile Pro Cys Val Leu Ile Ser Ala Leu Ala Leu Leu Val Phe Leu Leu 245 818 cct gca gat tcc ggg gag aag att tcc ctg ggg ata aca gtc tta ctc Pro Ala Asp Ser Gly Glu Lys Ile Ser Leu Gly Ile Thr Val Leu Leu 260 265 866 tet ett ace ace tte atg etg ete gtg get gag ate atg eee gea aca Ser Leu Thr Thr Phe Met Leu Leu Val Ala Glu Ile Met Pro Ala Thr 280 275 tcc gat tcg gta cca ttg ata gcc cag tac ttc gcc agc acc atg atc 914 Ser Asp Ser Val Pro Leu Ile Ala Gln Tyr Phe Ala Ser Thr Met Ile 300 295 290 962 atc gtg ggc ctc tcg gtg gtg gtg acg gtg atc gtg ctg cag tac cac Ile Val Gly Leu Ser Val Val Val Thr Val Ile Val Leu Gln Tyr His 305 310

| cac<br>His        | cac<br>His<br>320  | gac<br>Asp        | ccc<br>Pro        | gac<br>Asp        | ggc               | ggc<br>Gly<br>325 | aag<br>Lys        | atg<br>Met        | ccc<br>Pro        | aag<br>Lys        | tgg<br>Trp<br>330 | acc<br>Thr        | aga<br>Arg        | gtc<br>Val        | atc<br>Ile        | 1010 |
|-------------------|--|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------|
| ctt<br>Leu<br>335 | ctg<br>Leu   | aac<br>Asn        | tgg<br>Trp        | tgc<br>Cys        | gcg<br>Ala<br>340 | tgg<br>Trp        | ttc<br>Phe        | ctg<br>Leu        | cga<br>Arg        | atg<br>Met<br>345 | aag<br>Lys        | agg<br>Arg        | ccc<br>Pro        | ggg<br>Gly        | gag<br>Glu<br>350 | 1058 |
| gac<br>Asp        | aag<br>Lys   | gtg<br>Val        | cgc<br>Arg        | ccg<br>Pro<br>355 | gcc<br>Ala        | tgc<br>Cys        | cag<br>Gln        | cac<br>His        | aag<br>Lys<br>360 | cag<br>Gln        | cgg<br>Arg        | cgc<br>Arg        | tgc<br>Cys        | agc<br>Ser<br>365 | ctg<br>Leu        | 1106 |
| gcc<br>Ala        | agt<br>Ser   | gtg<br>Val        | gag<br>Glu<br>370 | atg<br>Met        | agc<br>Ser        | gcc<br>Ala        | gtg<br>Val        | gcg<br>Ala<br>375 | ccg<br>Pro        | ccg<br>Pro        | ccc<br>Pro        | gcc<br>Ala        | agc<br>Ser<br>380 | aac<br>Asn        | Gly<br>ggg        | 1154 |
| aac<br>Asn        | ctg<br>Leu   | ctg<br>Leu<br>385 | tac<br>Tyr        | atc<br>Ile        | ggc<br>Gly        | ttc<br>Phe        | cgc<br>Arg<br>390 | ggc<br>Gly        | ctg<br>Leu        | gac<br>Asp        | ggc<br>Gly        | gtg<br>Val<br>395 | cac<br>His        | tgt<br>Cys        | gtc<br>Val        | 1202 |
| ccg<br>Pro        | acc<br>Thr<br>400  | ccc<br>Pro        | gac<br>Asp        | tct<br>Ser        | ggg<br>Gly        | gta<br>Val<br>405 | gtg<br>Val        | tgt<br>Cys        | ggc               | cgc<br>Arg        | atg<br>Met<br>410 | gcc<br>Ala        | tgc<br>Cys        | tcc<br>Ser        | ccc<br>Pro        | 1250 |
| acg<br>Thr<br>415 | cac<br>His   | gat<br>Asp        | gag<br>Glu        | cac<br>His        | ctc<br>Leu<br>420 | ctg<br>Leu        | cac<br>His        | ggc<br>Gly        | ggg<br>Gly        | caa<br>Gln<br>425 | ccc<br>Pro        | ccc<br>Pro        | gag<br>Glu        | ggg               | gac<br>Asp<br>430 | 1298 |
| ccg               | gac<br>Asp   | ttg<br>Leu        | gcc<br>Ala        | aag<br>Lys<br>435 | atc<br>Ile        | ctg<br>Leu        | gag<br>Glu        | gag<br>Glu        | gtc<br>Val<br>440 | cgc<br>Arg        | tac<br>Tyr        | att<br>Ile        | gcc<br>Ala        | aac<br>Asn<br>445 | cgc<br>Arg        | 1346 |
| tto<br>Phe        | cgc<br>Arg   | tgc<br>Cys        | cag<br>Gln<br>450 | Asp               | gaa<br>Glu        | agc<br>Ser        | gag<br>Glu        | gcg<br>Ala<br>455 | gtc<br>Val        | tgc<br>Cys        | agc<br>Ser        | gag<br>Glu        | tgg<br>Trp<br>460 | Lys               | ttc<br>Phe        | 1394 |
| gco<br>Ala        | gcc<br>Ala   | tgt<br>Cys<br>465 | Val               | gtg<br>Val        | gac<br>Asp        | cgc<br>Arg        | ctg<br>Leu<br>470 | Cys               | ctc<br>Leu        | atg<br>Met        | gcc<br>Ala        | ttc<br>Phe<br>475 | Ser               | gtc<br>Val        | ttc<br>Phe        | 1442 |
| aco<br>Thi        | ato<br>Ile<br>480  | Ile               | tgc<br>Cys        | acc<br>Thr        | atc<br>Ile        | ggc<br>Gly<br>485 | Ile               | ctg<br>Leu        | atg<br>Met        | tcg<br>Ser        | gct<br>Ala<br>490 | Pro               | aac<br>Asn        | ttc<br>Phe        | gtg<br>Val        | 1490 |
| Glı               | gag gcc gtg tcc aaa gac ttt gcg taaccacgcc tggttctgta catgtggaaa<br>Glu Ala Val Ser Lys Asp Phe Ala<br>495 500 |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   |                   | 1544              |                   |      |
| ac                | tcaca  | ıgat              | gggc              | aago              | egc t             | ttgg              | cttg              | ıd cd             | agat              | tcgg              | a ccā             | gaa               |                   |                   |                   | 1590 |

<210> 2 <211> 502 <212> PRT <213> homo sapien

Met Arg Cys Ser Pro Gly Gly Val Trp Leu Ala Leu Ala Ala Ser Leu 10 Leu His Val Ser Leu Gln Gly Glu Phe Gln Arg Lys Leu Tyr Lys Glu Leu Val Lys Asn Tyr Asn Pro Leu Glu Arg Pro Val Ala Asn Asp Ser 40 Gln Pro Leu Thr Val Tyr Phe Ser Leu Ser Leu Leu Gln Ile Met Asp 55 60 Val Asp Glu Lys Asn Gln Val Leu Thr Thr Asn Ile Trp Leu Gln Met 70 75 Ser Trp Thr Asp His Tyr Leu Gln Trp Asn Val Ser Glu Tyr Pro Gly 90 85 Val Lys Thr Val Arg Phe Pro Asp Gly Gln Ile Trp Lys Pro Asp Ile 105 Leu Leu Tyr Asn Ser Ala Asp Glu Arg Phe Asp Ala Thr Phe His Thr 120 115 Asn Val Leu Val Asn Ser Ser Gly His Cys Gln Tyr Leu Pro Pro Gly 135 140 Ile Phe Lys Ser Ser Cys Tyr Ile Asp Val Arg Trp Phe Pro Phe Asp 150 155 Val Gln His Cys Lys Leu Lys Phe Gly Ser Trp Ser Tyr Gly Gly Trp 170 165 Ser Leu Asp Leu Gln Met Gln Glu Ala Asp Ile Ser Gly Tyr Ile Pro 185 Asn Gly Glu Trp Asp Leu Val Gly Ile Pro Gly Lys Arg Ser Glu Arg 200 205 195 Phe Tyr Glu Cys Cys Lys Glu Pro Tyr Pro Asp Val Thr Phe Thr Val 220 215 Thr Met Arg Arg Arg Thr Leu Tyr Tyr Gly Leu Asn Leu Leu Ile Pro 235 230 Cys Val Leu Ile Ser Ala Leu Ala Leu Leu Val Phe Leu Leu Pro Ala 250 245 Asp Ser Gly Glu Lys Ile Ser Leu Gly Ile Thr Val Leu Leu Ser Leu 260 265 Thr Thr Phe Met Leu Leu Val Ala Glu Ile Met Pro Ala Thr Ser Asp 280 285 Ser Val Pro Leu Ile Ala Gln Tyr Phe Ala Ser Thr Met Ile Ile Val 295 Gly Leu Ser Val Val Val Thr Val Ile Val Leu Gln Tyr His His His 315 310 Asp Pro Asp Gly Gly Lys Met Pro Lys Trp Thr Arg Val Ile Leu Leu 330 325 Asn Trp Cys Ala Trp Phe Leu Arg Met Lys Arg Pro Gly Glu Asp Lys 345 Val Arg Pro Ala Cys Gln His Lys Gln Arg Arg Cys Ser Leu Ala Ser 365 360 355 Val Glu Met Ser Ala Val Ala Pro Pro Pro Ala Ser Asn Gly Asn Leu 375 Leu Tyr Ile Gly Phe Arg Gly Leu Asp Gly Val His Cys Val Pro Thr 395 390 Pro Asp Ser Gly Val Val Cys Gly Arg Met Ala Cys Ser Pro Thr His 405 410 Asp Glu His Leu Leu His Gly Gly Gln Pro Pro Glu Gly Asp Pro Asp 425 Leu Ala Lys Ile Leu Glu Glu Val Arg Tyr Ile Ala Asn Arg Phe Arg 440 Cys Gln Asp Glu Ser Glu Ala Val Cys Ser Glu Trp Lys Phe Ala Ala

|          | 450        |                  | _          | _          | 455 | <b>.</b> |     | 71.7 -     | Dh  | 460 | 77 n 1 | Dho | mb ~       | T 3 o |     |
|----------|------------|------------------|------------|------------|-----|----------|-----|------------|-----|-----|--------|-----|------------|-------|-----|
| Cy<br>46 | 's Val Val | L Asp            | Arg        | Leu<br>470 | Cys | Leu      | Met | Ala        | 475 | Ser | val    | Pne | TILL       | 480   |     |
| I1       | e Cys Thi  | c Ile            | Gly<br>485 | Ile        | Leu | Met      | Ser | Ala<br>490 |     | Asn | Phe    | Val | Glu<br>495 | Ala   |     |
| ۷á       | al Ser Lys |                  |            | Ala        |     | ,        |     | 450        |     |     |        |     |            |       |     |
|          |            | 500              |            |            |     |          |     |            |     |     |        |     |            |       |     |
|          | <210       |                  |            |            |     |          |     |            |     |     |        |     |            |       |     |
|          | <2112      | > 20<br>> DNA    |            |            |     |          |     |            |     |     |        |     |            |       |     |
|          |            | > Homo           | Sap        | pien       |     |          |     |            |     |     |        |     |            |       |     |
|          | <400       | > 3              |            |            |     |          |     |            |     |     |        |     |            |       |     |
| gt       | ttgggtcc   |                  | ctta       | cg         |     |          |     |            |     |     |        |     |            |       | 20  |
|          | <210       | > 4              |            |            |     |          |     |            |     |     |        |     |            |       |     |
|          | <211       |                  |            |            |     |          |     |            |     |     |        |     |            |       |     |
|          |            | > DNA            |            |            |     |          |     |            |     |     |        |     |            |       |     |
|          | <213       | > Homo           | o Sa       | pien       |     |          |     |            |     |     |        |     |            |       |     |
|          | <400       |                  |            |            |     |          |     |            |     |     |        |     |            |       | 23  |
| g        | cagcatgaa  | ggtg             | gtaa       | ga g       | ag  |          |     |            |     |     |        |     |            |       | 23  |
|          | <210       | > 5              |            |            |     |          |     |            |     |     |        |     |            |       |     |
|          | <211       |                  |            |            |     |          |     |            |     |     |        |     |            |       |     |
|          |            | > DNA            |            |            |     |          |     |            |     |     |        |     |            |       |     |
|          | <213       | > Homo           | o sa       | pien       | l   |          |     |            |     |     |        |     |            |       |     |
|          | <400       |                  |            |            |     |          |     |            |     |     |        |     |            |       | 2.2 |
| C.       | tctcttacc  | acct             | tcat       | .gc t      | gc  |          |     |            |     |     | -      |     |            |       | 23  |
|          | <210       | > 6              |            |            |     |          |     |            |     |     |        |     |            |       |     |
|          | <211       | > 20             |            |            |     |          |     |            |     |     |        |     |            |       |     |
|          |            | > DNA            |            |            |     |          |     |            |     |     |        |     |            |       |     |
|          | <213       | > Hom            | o Sa       | pier       | 1   |          |     |            |     |     |        |     |            |       |     |
|          | <400       |                  |            |            |     |          |     |            |     |     |        |     |            |       | 20  |
| g        | tactgcagc  | : acga           | tcac       | cg         |     |          |     |            |     |     |        |     |            |       | 20  |
|          | <210       |                  |            |            |     |          |     |            |     |     |        |     |            |       |     |
|          |            | > 20             |            |            |     |          |     |            |     |     |        |     |            |       |     |
|          |            | ?> DNA<br>}> Hom |            | nair       | 1   |          |     |            |     |     |        |     |            |       |     |
|          | . ~213     | o> noin          | 0 30       | rberi      | 1   |          |     |            |     |     |        |     |            |       |     |
|          | <400       |                  |            |            |     |          |     |            |     |     |        |     |            |       | 20  |
| С        | gagcccato  | g aggt           | .gtag      | gcc        |     |          |     |            |     |     |        |     |            |       | 20  |
|          | <210       |                  |            |            |     |          |     |            |     |     |        |     |            |       |     |
|          |            | L> 20            |            |            |     |          |     |            |     |     |        |     |            |       |     |
|          |            | 2> DNA           |            | ani a      | 2   |          |     |            |     |     |        |     |            |       |     |
|          | <213       | 3> Hom           | 10 S       | яЬте:      | .1  |          |     |            |     |     |        |     |            |       |     |
|          |            | 0> 8             |            |            |     |          |     |            |     |     |        |     |            |       | 20  |
| C        | caggcatte  | c ggag           | jett       | gcc        |     |          |     |            |     |     |        |     |            |       |     |